USGS

WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2004ND46B

Title: Effects of West Nile Virus Infection, Immune Function, and Age on Female Yellow-headed Blackbird (Xanthocephalus xanthocephalus) Reproduction.

Project Type: Research

Focus Categories: Wetlands, Ecology, Conservation

Keywords: Wetlands, Breeding Habitat, West Nile Virus, Female Birds Immunity

Start Date: 09/01/2005

End Date: 12/31/2005

Federal Funds: $3,030

Non-Federal Matching Funds: $6,159

Congressional District: 1

Principal Investigator:
Wendy Reed

Abstract

Most avian studies of West Nile virus (WNV) have focused on using carcasses of birds to monitor the spread of the virus across North America, but little is known about the lethal and non-lethal impacts WNV is having on free-living bird populations. We are studying the prevalence of WNV in a free-living population of central North Dakota yellow-headed blackbirds (Xanthocephalus xanthocephalus) to determine the effects of female immunity and infection with WNV on reproduction. Specifically, we are determining the prevalence of WNV by testing captured individuals for WNV specific antibodies, quantifying variation in immune function of female blackbirds, and measuring the relation between female immune function and carotenoid allocation to eggs. We are also collecting mosquitoes at our study sites and testing all Culex tarsalis individuals, known WNV vectors in North Dakota, for WNV RNA. These objectives will allow us to evaluate potential relations between wetland bird WNV infection and increased aquatic habitat for breeding mosquitoes in North Dakota.